



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Attorney Docket No.: **ISPH-0524**

Inventors: **Bennett et al.**

Serial No.: **09/734,847**

Filing Date: **December 12, 2000**

Examiner: **Not Yet Assigned**

Group Art Unit: **Not Yet Assigned**

Title: **Alteration of Cellular Behavior by  
Antisense Modulation of mRNA Processing**

I, **Kathleen A. Tyrrell**, Registration No. **38,350**, certify that this correspondence is being depositing with the U.S. Postal Service as First Class mail in an envelope addressed to the Assistant Commissioner for Patents, Washington, D.C. 20231.

On this date: **March 1, 2001**

Kathleen A. Tyrrell  
Kathleen A. Tyrrell, Registration No. 38,350

Assistant Commissioner for Patents  
Washington, DC 20231

Sir:

**INFORMATION DISCLOSURE STATEMENT**

Pursuant to 37 C.F.R. §1.56 and in accordance with 37 C.F.R. §§1.97-1.98, information relating to the above-identified application is hereby disclosed. Inclusion of information in this statement is not to be construed as an admission that this information is material as that term is defined in 37 C.F.R. §1.56(b).

**(XX)** In accordance with §1.97(b), since this Information Disclosure Statement is being filed either within three months of the filing date of the above-identified application, within three months of the date of entry into the national stage of the above identified application as

set forth in §1.491, or before the mailing date of a first Office Action on the merits of the above-identified application, no additional fee is required.

( ) In accordance with §1.97(c), this Information Disclosure Statement is being filed after the period set forth in §1.97(b) above but before the mailing date of either a Final Action under §1.113 or a Notice of Allowance under §1.311, therefore:

( ) Certification in Accordance with §1.97(e) is set forth below; or

( ) The fee of \$240.00 as set forth in §1.17(p) is attached.

( ) In accordance with §1.97(d), this Information Disclosure Statement is being filed after the mailing date of either a Final Action under §1.113 or a Notice of Allowance under §1.311 but before the payment of the Issue Fee, therefore included are: Certification in Accordance with §1.97(e); Petition Requesting Consideration of the Information Disclosure Statement; and the fee of \$130.00 as set forth in §1.17(i)(1).

( ) Copies of each of the references listed on the attached Form PTO-1449 (modified) are enclosed herewith.

**(xx)** In accordance with §1.98(d), copies of some or all of the references listed on the attached Form PTO-1449 (modified) are not enclosed herewith because they were previously submitted to the U.S. Patent and Trademark Office in prior

application Serial No. 09/277,020, filed March 26, 1999,  
Serial No. 09/167,921, filed October 7, 1998 for which a  
claim for priority under 35 U.S.C. §120 has been made in the  
instant application.

Please charge any deficiency or credit any overpayment to  
Deposit Account No. 50-1619. This form is submitted in  
duplicate.

( ) The relevance of the listed references in a foreign language  
is as stated in the specification at pages @@.

All listed references are in the English language.

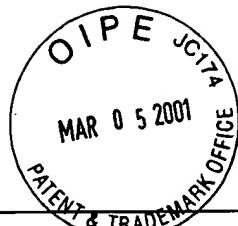
Respectfully submitted,

  
Kathleen A. Tyrrell  
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Date: March 1, 2001

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**Form PTO-1449 Modified**

List of Patents and Publications  
Cited by Applicant  
(Use several sheets if necessary)

U.S. Department of Commerce

Docket No.  
**ISPH-0524**

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**Bennett et al.**

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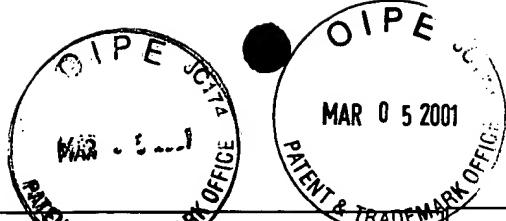
Group  
**Not Yet Assigned**

**OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)**

AJ	Sierakowska, H., "Restoration of $\beta$ -Globin Gene Expression in Mammalian Cells by Antisense Oligonucleotides that Modify the Aberrant Splicing Patterns of Thalassemic Pre-mRNAs", <i>Nucleosides &amp; Nucleotides</i> , 1997, 16, 1173-1182
AK	Takeshima, et al., "Modulation of in Vitro Splicing of the Upstream Intrón by Modifying an intra-Exon Sequence Which Is Deleted from the Dystrophin Gene in Dystrophin Kobe", <i>J. Clin. Invest.</i> 1995 95, 515-520
AL	Tuypens, et al., "Organization and chromosomal localization of the human interleukin 5 receptor $\alpha$ -chain gene", <i>Eur. Cytokine Netw.</i> , 1992 3, 451-459
AM	Wang, et al., "Antisense Oligodeoxynucleotides Selectively Suppress Expression of the Mutant $\alpha 2(1)$ Collagen Allele in Type IV Osteogenesis Imperfecta Fibroblasts", <i>J. Clin. Invest.</i> , 1996, 97, 448-454
AN	Amarante-Mendes et al., "Bcl-2-independent Bcr-Abl-mediated resistance to apoptosis: protection is correlated with up regulation of Bcl-x <sub>L</sub> ", <i>Oncogene</i> 16:1383-1390
AO	Boise et al., "bcl-x, a bcl-2-Related Gene that Functions as a Dominant Regulator of Apoptotic Cell Death" <i>1993 Cell</i> 74:597-609
AP	Fujio et al., "Signals through gp130 Upregulate bcl-x Gene Expression via STAT1-binding cis-Element in Cardiac Myocytes", <i>1997 J. Clin. Invest.</i> 99:2898-2905
AQ	Pollman et al., "Inhibition of neointimal cell bcl-x expression induces apoptosis and regression of vascular disease", <i>1998 Nature Med.</i> 4:222-227
AR	Wang et al., "Induction of bcl-x by CD40 Engagement Rescues slg-Induced Apoptosis in Murine B CeHs <sup>1</sup> ", <i>1995 J. Immunol.</i> 155:3722-3725

**EXAMINER**

**DATE CONSIDERED**



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<b>Form PTO-1440 Modified</b> List of Patents and Publications Cited by Applicant (Use several sheets if necessary) U.S. Department of Commerce		Docket No. <b>ISPH-0524</b>	Serial No. <b>09/734,847</b>
		Applicant <b>Bennett et al.</b>	
		Filing Date <b>December 12, 2000</b>	Group <b>Not Yet Assigned</b>

**OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)**

AA	Chu, et al., "Alternatively Processed Human E-Selectin Transcripts Linked to Chronic Expression of E-Selectin In Vivo", <i>J. Immunol.</i> , <b>1994</b> , 153, 4179-4189
AB	Hodges, D., "Inhibition of Splicing of Wild-Type and Mutated Luciferase-Adenovirus Pre-mRNAs by Antisense Oligonucleotides", <i>Mol. Pharmacol.</i> , <b>1995</b> , 48, 905-918
AC	Dominski, et al., "Restoration of correct splicing in thalassemic pre-mRNA by antisense oligonucleotides", <i>Proc. Natl. Acad. Sci. USA</i> , <b>1993</b> , 90, 8673-8677
AD	Dunckley, et al., "Modification of Splicing in the dystrophin gene in cultured Mdx muscle cells by antisense oligoribonucleotides", <i>Human Mol. Genetics</i> , <b>1998</b> , 5, 1083-90
AE	Dunckley, et al., "Modulation of Splicing in the DMD Gene by Antisense Oligoribonucleotides", <i>Nucleosides &amp; Nucleotides</i> , <b>1997</b> , 16, 1665-1668
AF	Klasens et al., "Inhibition of polyadenylation by stable RNA secondary structure", <i>Nuc. Acids Res.</i> , <b>1998</b> 26, 1870-1876
AG	Kole R., "Modification of pre-mRNA splicing by antisense oligonucleotides", <i>Acta Biochimica Polonica</i> , <b>1997</b> , 44, 231-238
AH	Moulds, C., et al., "Site and Mechanism of Antisense Inhibition by C-5 Propyne Oligonucleotides", <i>Biochem.</i> <b>1995</b> 34, 5044-53
AI	Sierakowska, et al., "Repair of thalassemic human $\beta$ -globin in mRNA in mammalian cells by antisense oligonucleotides", <i>Proc. Natl. Acad. Sci. USA</i> , <b>1996</b> , 93, 12840-44

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<b>Form PTO-1449 Modified</b>  List of Patents and Publications Cited by Applicant (Use several sheets if necessary)  U.S. Department of Commerce		Docket No. <b>ISPH-0524</b>	Serial No. <b>09/734,847</b>
		Applicant <b>Bennett et al.</b>	
		Filing Date <b>December 12, 2000</b>	Group <b>Not Yet Assigned</b>

**U. S. PATENT DOCUMENTS**

<b>Examiner Initial</b>		<b>Document No.</b>	<b>Date</b>	<b>Name</b>	<b>Class</b>	<b>Subclass</b>
	AA	5,627,274	5-6-97	Kole, et al.	536	23.1
	AB	5,583,034	12-10-96	Green et al.	435	240.2
	AC	5,776,905	7-7-98	Gibbons et al.	514	44
	AD	5,646,008	7-8-97	Thompson et al.	435	69.1

**FOREIGN PATENT DOCUMENTS**

<b>Examiner Initial</b>		<b>Document No.</b>	<b>Date</b>	<b>Country</b>	Translation YES	NO
	AE	WO 94/26887	11-24-94	PCT	X	
	AF	WO 95/00642	1-1-95	PCT	X	
	AG	WO 98/05777	2-12-98	PCT	X	

<b>EXAMINER</b>	<b>DATE CONSIDERED</b>